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## THE EYES IN GOLF

THE flight of the golf ball has occupied the attention of some very eminent men. Golf was not so popular in Newton's time as it is now. If it had been we should no doubt have had the benefit of his knowledge in connection with various matters appertaining thereto.

Newton is more celebrated for what he is supposed to have discovered through the flight of the apple. He was not, however, above turning his mind to matters of less moment than the law of gravitation; and over two hundred years ago, in most learned and weighty language, he laid down the principles governing the swerve of a tennis ball.

"Incidentally I may remark that when I applied the same principles to cricket and explained the swerve of the ball in England to English cricketers in my book 'Swerve, or the Flight of the Ball,' a famous English cricketer, famous, I may say, more for his physical than his intellectual 'wallop,' declared that what I said was not to be taken seriously. Poor Newton! I did not give him away, and now in The Times Library, London, that book of mine may be found catalogued as a work on applied mathematics, and I do not believe that I could do a simple equation without assistance." Thus writes P. A. Vaile in his book "The New Golf," published by E. P. Dutton & Co.

We have in the records of golf writing some remarkable contributions by learned men.

Professor Tait, father of the famous golfer Freddie Tait, who was afterwards killed in the Boer War, published an article in The Badminton Magazine of March, 1896, entitled "Long Driving." Professor Tait really was a very learned man; and he worked it out by mathematics that it was beyond human capacity to drive a golf ball more than a certain number of feet and inches, which he duly set down. Next day his famous son, somewhat undutifully, so the story runs, knocked his father's calculations sky high by driving a golf ball much farther than the mathematical limit.

Mr. Vaile writes of the injunction, "keep your eyes on the ball" that it is given to every golfer or player. Every book loudly insists on it, and if anything goes wrong with any part of the swing anyone who can think of nothing else to say says it. He says he would like to see if it is possible to deal intelligently with the function of the eyes, and also to avoid using this parrot-cry of the links.

One of the main essentials, he insists, when playing a stroke is to keep one's head still. This is not so clearly and forcibly insisted on as it should be. One is reminded frequently and forcibly of the importance of sustained visual operations in relation to the ball, but those who insist on this quite lose sight of the fact that staring at the ball is not really very useful if one is moving one's head about, up or down, or backwards or forwards.

It will be seen that one could concentrate on the unoffending little ball a glare of fixed intensity that would cause any ordinary man to wilt, and could sustain that gaze for "quite some time," but it would be fruitless, if while this was going on (and contemporaneously the gazer was driving) he was elevating and depressing the part of his anatomy wherein are fixed his hypnotic instruments.

Obviously then the thing that really matters so far as regards the eyes is that the head must, during the stroke, be kept in the same position as it was in at the address and must not be moved until the stroke has been played.

It really is not necessary that the eyes should be directed towards the ball at the moment of impact for they have fulfilled their function long before the clubhead reaches the ball. The arc in which the clubhead is to travel is irretrievably settled before the club has got within two feet of the ball and the eyes are to all intents and purposes out of business. This is where the trouble comes in. We all know the little saying about somebody finding mischief for idle hands. Well, it's just the same with idle eyes. Having nothing else to do in the stroke they naturally want to look at the result of their work. That would not be so prejudicial to the stroke if they were located anywhere else than in the head or if they would move independently of the head. Unfortunately they do not. When they cease to regard the ball and look up the head goes up too—so does the stroke. Therefore we excuse the parrot-cry for it conduces to good golf.

We must remember that once we have settled to our stance and address

and the club has left the ball the head should be as immovable as if it were held in a vice. The feet also are fixed in their position, any moving they do being practically just up and down at the heel, so that all the movement of the golf stroke takes place, until the follow-through begins, between three fixed points, the head and two feet.

Harry Vardon declares that he can address the ball and then drive it nearly as well with his eyes shut as when he is looking at it. We have many times seen a young American professional address the ball, shut his eyes and drive truly and well with his face turned up to the sky. It was really quite amusing and instructive to watch him. If scientific experiments were conducted we should be surprised to find how soon in the downward stroke the eye ceases to be required.

It would, however, be unwise to insist too much on this; but it is just as unwise to go to the other extreme, as do so many famous players, and persist that it is not only necessary but advisable to continue gazing at the place where the ball was when it has gone. This is really bad golf and cannot be defended on any ground except that "The greater includes the less" and that if we teach them this we may induce them to keep their heads still until they have struck the ball; a thing which, in itself, though surrounded with much clatter and untruth, is good.

It is quite wrong to continue turf-gazing after the ball has gone. There is nothing to be gained by doing this, and much to be lost. If one continues to look fixedly at the place where the ball was one must miss much of the pleasure of one's noblest efforts. There

is of course another aspect. One may be saved some pain, but let us not dwell on this.

The quite serious side of this long-continued regard is however that in sustaining it one is almost sure to keep the head still. This means that one's follow-through is interfered with, for a rigid neck and head must interfere with the shoulders.

Vardon has said that he does not approve of keeping the eye fixed upon the place where the ball lay, so that the grass is seen after the ball has departed; you must fixedly regard the ball until you have hit it, but no longer. You cannot follow through properly with a long shot if your eyes remain fastened on the ground. Hit the ball, and then let your eye pick it up in its flight as quickly as possible. Of course this needs skilful timing and management but precision will soon become habitual.

This is undoubtedly sound practical golf. Many American players disregard it and their long game suffers for it. Stopping the head must inevitably tend to shorten one's stroke and, moreover, it will probably affect adversely one's direction.

Some people may doubt that the eyes finish their function so early in the golf stroke. The duration of impact in the drive has been measured by an eminent scientist who computes it at one ten-thousandth of a second. We can readily understand that the golf club is traveling at an extremely rapid rate. Can anyone imagine that it would be possible, at say eighteen inches from

the ball, to readjust successfully the line of travel of the club-head, to alter the arc in which it had been traveling and to start it going in another without absolutely ruining the stroke? It would indeed require some imagination to believe in this reconstruction. If this cannot be done it would seem to be undoubted that the eyes really do fulfill their function extremely early in the golf swing, in fact much earlier than has been indicated.

Consideration of this point naturally causes one to come to the conclusion that there is in the drive of a vast number of golfers a period before impact during which they do not see the club. In Vardon's drive there doubtless is a period equal to five or six inches, just before impact, during which he never sees the ball. This golfer's "blind spot" exists even with the most accurate players. It is found in nearly all sport. It is in tennis very marked. The cricketer knows it to his cost. In tennis it is astonishing how few balls one sees, not on to one's racquet, but to within three or four inches of it. Of course we all know the old slogan; and we also know how it is honored.

This blind spot exists also in la-crosse, rackets, polo, base-ball, hocky, and even in billiards; but it is almost certain that it becomes less the farther away from the eye the ball is played. It is probably least in polo; and after that there is less of it in the golf drive than in any other game. This is very fortunate for the golfer, for he already has enough with which to contend.